Missouri Botanical Garden

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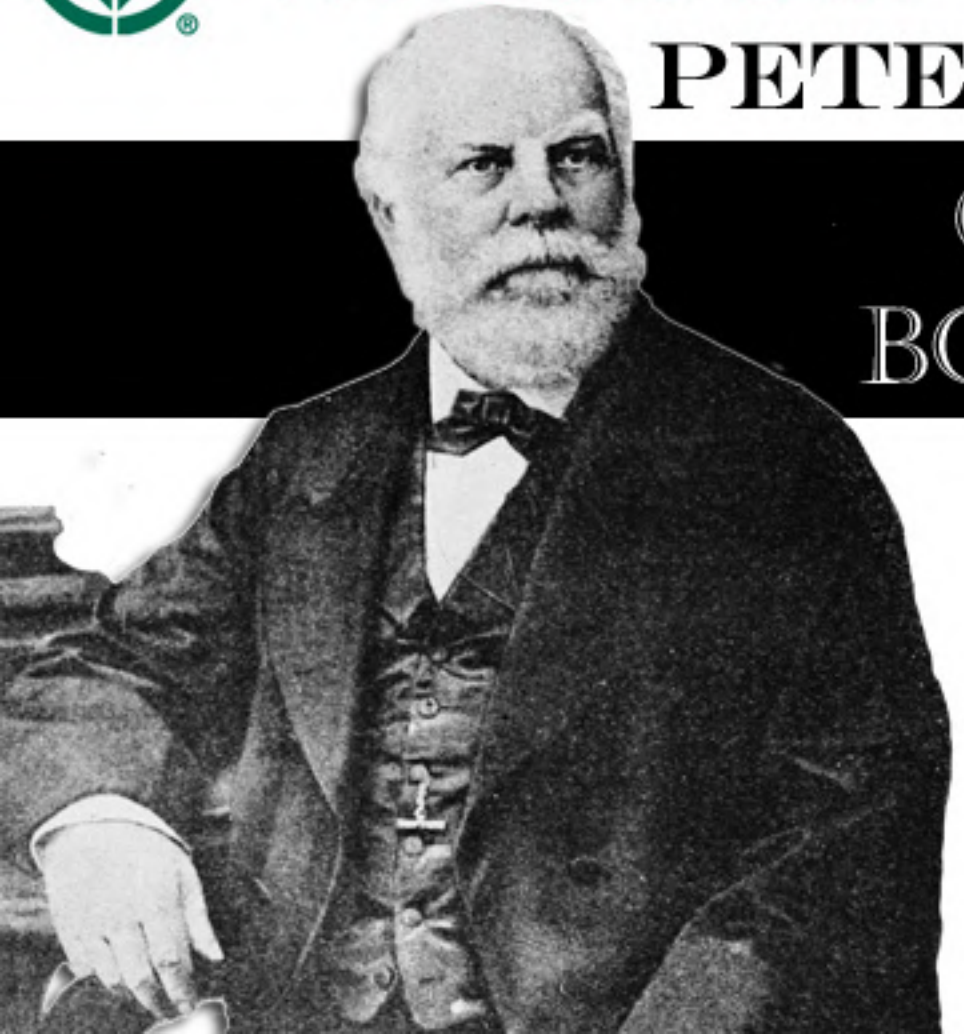
George Engelmann Botanical Notebooks



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(the North American)

Notes on Callitriche. Mar. 1864

Callitriche heterophylla, L. Fruit sessile or nearly so with a pair of bracts at its base.

Stems (very variable in length) often a foot or more long, much branched and rooting from the base; leaves very variable as to shape and size, varying from round-obovate to linear (and flaccid) usually both sorts on the same plant, 3/4" - 2 1/2" long by 1/3" - 3" wide in the widest place, which in the narrow ones is at the base, and in the wider towards the apex, — in fact the leaf produced at the surface of the water and which at first is round obovate and about 1/4' broad (and 1/2' long) usually gradually changes upon lengthening (submerged) losing in breadth and gaining in length, until it finally becomes linear, obtuse-lanceolate-linear, and truncate and emarginate 2-toothed at the apex! and from 3/4'-2 1/2' long; not so bright green as in C. autumnalis, the base slightly dilated and clasping. all those produced at the surface of the water in completed 3-5-nerved, the rest 1-nerved, the upper surface covered with scattered small circular depressions and the whole surface when dry appears to be covered with a transparent cellular coat.

Flowers monoicous or perfect; stamens 1-"6" long; stigmas threadlike-thrust 1-"2" long; fruit small, nearly sessile, with a pair of colored bracts at its base, and with a characteristic plump appearance (which once observed serves to distinguish at a glance all the American forms of this species [illegible] as well as those from Asia), somewhat obcordate, varying from round obovate to

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orbicular lead to round-ovate, usually flattish
and thin (sometimes nearly terete) bicornuate,
deeply emarginate at the apex, slightly-often
apparently not at all so at the base, ~~the ventral~~
~~obtuse base from that about rounded~~ and sharply
~~keeled on the back.~~ (~~the keel~~ ~~somewhat~~ convex-
-ly ~~leaving the~~ circumscribed ~~groove~~ (~~off the~~
~~front~~) ~~to be~~ usually very ~~narrowed~~ ~~and after~~ ~~witht~~-
-ing ~~while the longitudinal one is very~~
~~slightly (the convex of the dorsal)~~, the
~~transverse~~ of the same color as the
~~leaf~~) obovate-oblong, (~~wedged~~ ~~tapered~~) and thin
at the apex, narrowed and thicker at the
base, about 0,94-m.m long by 0.44-m.m
broad, convex on the outer and plane
on the inner surface. Bounded but slightly
and sharply (~~margined~~) on the back by a membran-
-aceous keel, which is an extension of the
outer coating of the seed which resembles
the outer coating of the stem and leaves
(and is plainly a continuation of it) its de-
-pressions fitting into (the) closely reticulated
and pitted meshes. —

Includes many provincial species. C. heterophylla
Rusb is the common form, C. terrestris Rusb,
is a stole with the leaves all ~~broader~~ and under water
and linear. (C. brevifolia Rusb.) C. turrestris Rof.! is a much
more Growing form with
C. Nagasakiensis
Specimens from China, Japan,

the circumferential groove - on account of the convergence of the keels of the nucules - very narrow, often scarcely indistinct, while the longitudinal one is very evident. (the corona of C. Olivaeformis) Nucules of the same color as dried plant, not readily separating.

Ecuador and Antarctic America all correspond with those from different parts of the U.S excepting the last (Chas thicker leaves and which ^ their blackish as if it grew in blackish swamps, but there last specimens on sticks and it may be a different species. belong to

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Callitriche autumnalis L.

Stems 4'–8' long, often much branched and rooting from the joints below, striate, not fistulous(?) leafy.

Leaves all alike, ½–1" 8" long bright green, ~~fleshy~~ ~~thick~~ ~~not~~ ~~2 lines~~, lanceolate-linear, constricted at the rounded clasping ~~base~~ concave base. the cavity containing the flowers, emarginate at the apex, the sinus crescent-shaped. distinctly but very finely striate under a lens (caused by the cells being arranged in linear rows end to end!) without impressed punctures somewhat hyaline on the extreme margin which forms a slight curve from the base to the apex.

somewhat rounded

Flowers monoicous (always?) bracteate

Stamen very short. a little longer than the germ ½ the length of the stigmas; ~~filaments~~ stigmas thread-shaped, 3 times as long as the ovate germ. strongly deflexed immediately the ovules are fertilized.

Fruit inclining to orbicular almost imperceptibly longer than broad, thickish, on a very short, smooth indistinct pedicel.

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slightly emarginate at the base, often indistinctly so, ~~but~~ more distinctly so at the apex. the surface plane inclining to concave. the longitudinal grooves very indistinct. the circumferential grooves deep, ~~but~~ broad, and angular; mostly broader than in C. strangei; thin, sharply and either narrowly or broadly keeled, the keels sparse and distinct or rarely obsolete.

Habitat. St. petersburg Russia and Berlin Prussia (Dr Eglemann!) Germany Fries! — Scotland Arnott! — Lake superior Lorin! Lake James Brit Columbia! Dr. Hooker! —

All the specimens I have seen from the above localities agree in every particular. No variation was observed except in the length of the stems and a slight difference in the size of the fruit which is from 1/2" — 1" long to nearly 1" broad. Stamen & stigmas not present except for a short time after the fertilization of the ovules.

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Callitriche [redacted] Engelmanni Sp. nov. — C. Engelhardt
C. plantæ minimæ; Caulis V [redacted] in Herb. Jam. &c.
prostratis ramosis; foliis minimis
spatulo=ovatis vel=elliptici vinclis=
=tricte trinervis sub crassis secundis
horizontalis, fructu sessili brevi sed
distincte pedunculatis late orbiculati,
basique apice equaliter & profunde emarginatis,
achenii tenuis ovalis vel ovoeatis
margine
achenio membranaceis acutis.—

Stems 1–2' long, leafy and much branched, creeping and rooting at the joints; leaves 1–"2" long, spatulate=ovate or =elliptical, thickish, indistinctly and singularly 3-nerved, blunt, the narrow base erect and at right angles to the stem, the broad upper portion spreading horizontally (in a plane parallel to the stem), causing an abrupt bend and a twist in the narrow portion just where it begins to spread (riders. Structure and shape of leaf much as in C. [redacted],

Fruit bractless, black and shining when mature, [redacted] reticulate over

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pitted; on a distinct pedicel
usually about its own length, (never
exceeding) and often attaining
to only half that length,) nearly
orbicular though always a little
wider than long, and very slightly
wider above than below the
middle, thin, with flat surfaces,
deeply and equally emarginate
at both base and apex; a very
little thicker below and the wider
above, the groove around the
circumference very narrow and
deep, acutely angled; nutlets generally
long 4 separating 0.5-0 mm. long
by 0.3½-m.m. broad, unequally
oval (or bar-shaped) in cluing two about
very thin, slightly convex on the
inner, and plane on the outer
surface, strongly and distinctly
pitted, sharp on the back with an
echinate membrane on keel
(as in C. marginata when that fails
to produce a wing) the outer mem-
- branaceous in type A (as in
C. pulpulenta,) very indistinct and
thin stamens and stigmas
same length as fruit (0.5-0 m.m. long.)

[redacted]

Hab. First detected on clay argillaceous soil on the high hills of Staten Island N.Y. in old by ways in open woods where the ground was considerably descending. in June 1861 by the writer in company with Prof. F. A. Englemann of N.Y. City. — Subsequently it was discovered to be very plenty in all the old by ways on the Palisades along the Hudson. Also in Dr. Torrey's Herbarium sparingly mixed with Nuttall's own specimens of C. pedicellata, from Ark. collected in 1814. — Found from Ohio Comm. by J. [redacted] Lea as "C. stenostachys? Rob." And subsequently Dr. Englemann has communicated specimens from Arkansas "covered with water in naked prairies" ^ spring places on

also Shreveport Aug 20th 1851

Shirrell

Collected by Dr. Leavenworth

Callitriche marginata Tor!

Stems prostrate, 2'-3' long, much branched — and rooting at the joints, leafy; leaves spatulate, thinnish, covered with minute punctures (Structure as in C. heterophylla) stamens 1/2 long; staminal of the fruit, at first spreading becoming recurved; ~~[illegible]~~ fruit often several from the same axil, subtended by very long peduncles, orbicular, much compressed and of an uniform thickness throughout. strongly and equally emarginate at both the base and apex. deeply and rather narrowly grooved about the circumference: outlet broadly winged or only strongly keeled on the back 3/4 ths. the way round. Also the wing a keel membranous, pellucid, thickly studded with key-like, stout, dark-colored ribs extending to the outer margin of the wing which is an extension of the membranous (cuticle-like) covering of the fruit, — the ribs being an extension of the proper epicarp of the seed, all ad-

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= here rather firmly together, and when divested of the thick, whitish and strongly pitted coat which hides their true (blackish) color, and of the wing - they are about 0.66 mm. long by 0.44 mm. broad. plane on the inner and slightly convex on the outer surface. pedicle 2-1/6" long, very broad (as broad as lower portion of the leaf.) ligulate, tapering upward, strongly 1-nerved. becoming declined after the fertilization of the ovules.

Fruit variable as to size and appearance but these variations are chiefly in the beak which is often as broad as the true outlet. though sometimes only rather more than a beak.

Hab. California! Colorado! Utah! Arizona!
in Herb. Torrey N. Mexico Bigelow!
in Herb. A. Gray

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Callitriche pedunculosa Nutt.
Trans. Amer. Phil. Soc. n. s. vol.
5, p. 140.!:— also in Herb. Torr.!
C. Nuttallii Torr. in Bot. Whip. Expd. !
(not C. pedunculata D C. nor C.
pedunculosa Amott.)
Stems much branched
1–3' long: leaves linear spatulate
(more attenuate at the base than in
C. marginata), thickish crowded
with impressed nerves: ~~bracts~~
stamens ½" long. Sheath: filiform
much longer than the fruit, deflex-
-ed from the beginning: fruit
bractless, long-pedunculate, plainly
broader than long. Widest in the
middle and of equal thickness
~~throughout, thickish, that is with loose~~
throughout, thickish, the longitudinal
grooves small the circumferential
very broad and shallow; obtuse,
the thickened keels strongly divergent.
clothed with a whitish membran-
-aceous integument, but the true
color of the nutlets when this is

(Caused by the bracts)

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removed in the same; Nutlets
0.80 M.M. long by 0.55 m.m. broad;
(broader in proportion to the length
than in the other species) not easily
separable, the inner surface flatter,
the outer surface elevated in the
middle as well as towards
the ~~Dorsal~~ Keel, Keel much
thickened, obtuse, pedicels
1"-3" long, very slender, and
narrow (thread-shaped) de-
clined after the fertilization
of the ovules and often bringing
them beneath the surface of the
soil.

Hab. Arkansas Nuttl Texas Lamond!
Louisiana Hale! - Carpenter!

(This plant is strongly marked with
Nuttall's own specimens of C. pedicu-
lus in ~~Dr. Torrey's~~ Herb. Torr.!)

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Callitriche peploides Nutt. Fl. N. Am. 1! and in Herb. Torr.!

Stems decumbent, usually erect, 1–2' high, leaves very small, spatulate, thickish, indistinctly 3-nerved, closely pectinate, staminate about the length of the fruit, the pistillate shorter than the fruit. (Shorter than in any of the other species.) Cylindrically truncate at apex, horizontally spreading; fruit without bracts, very minute, sessile, black and shining when mature, broader than long, distinctly cordate and broadly winged, emarginate above, much flattened, thicker and narrowly emarginate below; a side view presents a broadly obcordate appearance but a vertical view a crucially 4-lobed appearance, the lobes emarginate, the sinuses bent upward and associated at the base so as to bring that portion of the right angles to the upper portion giving to the fruit the peculiar appearance mentioned above.

Nutlets very easily separating as in C. Austinii ~~but~~ the fruit being covered with an extremely delicate cuticle, as in the above named species. *

* When the cuticle is thick I have observed that the nutlets are correspondingly tenacious of each other's society — this is the case in C. Asagrayi — Sprengii — Macrostachya — and perhaps others — they are equally easy of separation in C. [redacted] Engelmannii and C. Nephelicola.

Hab. Arkansas, Kentucky, Louisiana,

Hab! Mexico! L. C. Lundell

Jefferson Lamarth.! Lyon

Comfort! Galveston Island

Texas! Prof. Lindheimer Capt

Dr. Engelmann Comm.

Very common in the Mississippi Valley according to Nuttall, along fences and under the eaves of Houses according to Beaumont in Hab. Tex.

(Nuttall's Specimens in Hab. Tex are mixed with both C. [redacted] Engelmanii, and C. Nephelicola!)

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Callitris the Questions ?

Have the plants of the terrestrial section star-hairs or not

Are the "dots" or "punctation" the stomata, or what?

Have all the terrestrial section those single crystals in the parenchyma cells ?

and only the plants of that section ? "

Re-examine Callitris truncata ? from Hannover.

" Examine Stomata

Is the Embryo of all terrestrial shorter than of the other, (Hegler. C. reflexa

Have the Submersed forms of Amphibious Callitris stomata ?

787

Dr Engelman

Dear Sir

Inclosed you will
find fifty dollars left by Mrs
— to pay you in full for what
— owes you. You will please
— the receipt by the bearer.

Yours respectfully

Mrs D. M. House

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T. = Coll. Hamb = S.

U Hb. Short = Coll A. Gr. heterophylla microcarpa s. typica

V — — — — — = xB fruit sem.

W — — — — — ? or vera? no fruit

X — — — — ! fors subnuncupa — — — — microcarpa

Y — — — — ! fors heterophylla macrocarpa

Z. Hb Short. Coll — subnuncupa setosa fructibus parcissime inermibus (Short?)

Za — — — — = Y

Bb. Hb Collins — — = W

Cc Hb Short — — forma brevifolia terrestris

Dd. And Herb Coll — — — — — microcarpa

subclavata? microcarpa

Ee Hb Short Coll elongata? = H. bl no fruit

fors terrestris

F.f. Hb. Dur. C. ~~hamata~~ pedunculis abortivis fructibus subaxillaris

ALEX. LEITCH,
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68

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A. Dunal C. Engelmanni — C. fendleri

B. " C. Nuttallii — C. Nuttallii Ark

C. " C. Engelmanni — Ark

D. " C. Nuttallii Gray pl. — Nuttallii

E. Short C. Nuttallii Torr

F. " C. Engelmanni

G. Asa Gray C. — — —

H. Dun. C. perplexus (sessilis) Torr

I. Dun C. — — — — n — Ark "

K. Short (——— n. sp Hale Co

L. —— (——— Missouri Botanical Garden George Engelmann Papers

M. Asa Gray C ——— ? — same

N. Short C. Engelmanni ? paper

O Short C. ambiguus —

P. Collins C. vesicarius agrest. latifol. longistylus

Q Short C. vesicarius terrestris

R Asa Gray C. ——— Engelmanni

S. Collins — — — (C. Engelm. mixed with

T (small specimens not fruit cannot be named

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Callitriche Austinii Grayi

macrocarpa, sup. suboccidentalis, ad C. verna var. transiens

heterophylla, linearis, brevifolia

Westchester. Dutchess Co. Sara River
H6 Short. Tuckerman
H6 Gray

Kentucky Short. H6 Gr.

Sa

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Jan 13, 1865

Callitriche 790

I Terrestres isomorphae bracteatae
plerumque microcarpae

1. C. peploides Nutt.	0.3	0.016–0.020	0.5–7	0.4–5
2. C. microcarpa Lag	0.15	0.014–0.018	0.4	0.45
3. C. deflexa Braun	0.2	0.017–0.019	0.9	0.7
4. C. Austini Eng	0.2	0,017–0.020	0.7	0.5–6
5. C. deflexa Braun	0.2	0.017–0.019	0.9	0.7
6. C. marginata Torr	0.4	0.018–0.020	1.1–1.6	0.8–1.3
7. C. Nuttalliana Torr	0.2–3	0.022–0.026	1.1	0.8
8. C. macroptera Hegelm	0.3	0,020–0,022	0.9–1.1	0.7–0,8
9. C. occidentalis Hegelm.	?	?	1.4	1.2
10 C. turfosa Bert. (Cape Horn spec.)			1.3	1,2
	0.3	0.017–0.019	0.8–0.9	0.7

II Amphibiae heteromorphae, bracteatae, macrandrae
longistylae, fructibus plerumque parce scrobiculatis, plerumque
majoribus — pollinis grana majora.

11. Hegelmaieri Hegelm	0.7–1.0	0.020–0.027	0.7–1.0	0.6–1.0
12. Verna Lin	0.5–0.7	0.020–0.030 (16–19 × 25–28)	0.8–1.1	1.0–1.3
13. stagnalis Scop	0.5–0.8	0.025–0.030	1.3–1.5	1.3–1.7
14 Bolleri Sond	0.5	0.025–0.030	1.0–1.1 / 2.0	0.9–1.1 / 1.7
15. hamulata Kütz	0.5	0.030–0.045	1.2–1.4	1.0–1.3
16 pedunculata DC.	0.4	0.020–0.026	1.0–1.3	1.0–1.3
17. heterophylla Eng — purpurea	0.5	0.024–0.028	1.1–1.3	1.1–1.4
18 Autarctica Eng	1.1	0.024–0.031	1.3 / 1.3	1.4 / 1.5
19. obtusangula LeGall	0.6	0.022–0.028	1.1–1.4	1.1–1.3
			1.0	1.1

III. Submersae isomorphae, complicatae bracteatae
macrandrae, majoribus,
pollinis grana majora
longistylae.

20 Truncata Guss	0.3		1.1–1.2	1.1–1.2
21 autumnalis Lin	0.5	0.024–0.034 × 0.020–0.024 (0.020–0.024)	1.5–2.4	1.5–2.4

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13 Jan

1. Terrestres

Isomorphae, ~~spicatae~~ globosae microphyllae,
ebracteatae, antherae parvae transverse
in filamentis non elongatis, persistentes, pollinis granula minuta
fructus minimi etc (N 6-9) saepe
in parenchymate cellulis crystallophorae.
anth. 0.13 – 0.40 mm diam.
Pollen 0.013 – 0.022 diam.
fructus 0.4 – 0.9 diam. alt 0.4 – 0.7
etc N 6.49 : 0.9 – 1.6 × 0.7 – 1.3

2. Amphibiae

Heteromorphae, heterophyllae
bracteatae, antherae magnae transverse
in filamentis demum elongatis persistentes,
pollinis granula majora
stylo plerumque longiores, fructus plerumque
majores, maxime ve (exc. Asa Gorji) (versa vice)
nunquam crystallophori

formae terrestres microphyllae bracteatae
v. ebracteatae, antherae steriles abortivae in filamentis
nunquam elongatis, styli breviores.

formae submersae foliis ebracteatis
antherae abortivae in filamentis nunquam elongatis
anth 0.40 – 1.00 mm diam.
Poll 0.020 – 0.045 diam
fructus 1.0 – 2.0 diam. 0.9 – 1.7 alt
exc N 11.912 : 0.7 – 1.1 × 0.6 – 1.3

3. Submersae Isomorphae

v ebracteatae, antherae magnae ovatae in filamentis
nunquam elongatis mox deciduae, pollinis
granula majora, styli longiores, fructus
majores nunquam crystallophori.
anth 0.50
Poll 0.020 – 0.034
fruct 1.1 – 2.4 diam × 1.1 – 2.4 alt

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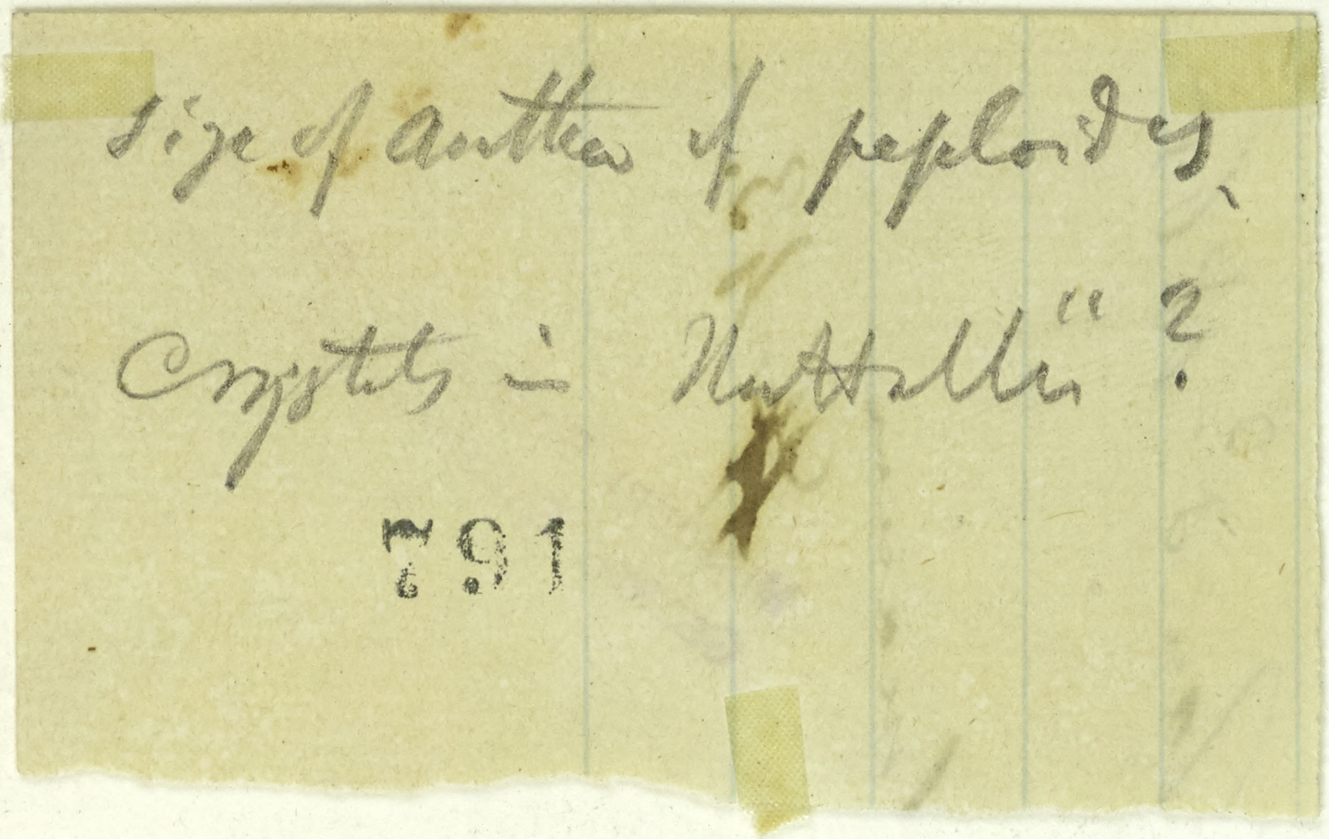

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Crystals in Parenchyma of fruit

					mm
Callitr	microcarpa	large Engl	3-2½ / 540	6 / 785	0.005 – 0.006 0.008
———	Austini	small. Engl	1-1½ / 280	2-2½ / 540	0.003 – 0.005
———	deflexa	Hegelm. Engl		2-4 / 540	0.004 – 0.007
———	macroptera	Hegelm.			
———	peploides	small, Engl	3-4½ / 780	1½-2 / 415	0.003 – 0.006
———	turfosa	Engl 2-4 / 540			0.004 – 0.007

not present.

not present in

Callitr. Japonica, verna, marginata stagnalis heterophylla

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54 | 3000 | 270 | 0.005 | 54 | 3250 | 324 | 0.006 | 780 | 6000 | 624 | 0.008

28 | 100 | 84 | 0.003 | 28 | 125 | 112 | 0.004 | 54 | 200 | 216 | 0.004 | 54 | 250 | 0.005

54 | 200 | 54 | 400 | 378 | 22 | 0.007 | 415 | 1500 | 1245 | 25510 | 0.0035 | 415 | 2000 | 4

78 | 300 | 312 | 0.004 | 78 | 450 | 468 | 0.006 | 200 | 54 | 400 | 7

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Sept 14

Callitriche terrestres

~~Callitriche polymorphe~~ (Lam.) — andræ

1 C. peploides (Drummond)

2 C. Longelhamptiana. (Hoffm.)

3 C. Hookeri (Hoffm.)

4 C. marginata Torr

5 C. pedunculata DC

Callitriche amphibiæ [natantes?]

C. Austini

C. verna

C. stagnalis

C. hamulata

C. truncata

Callitriche

C. autumnalis

C. obtusangula

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1-121

Callitriche

794A

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Rhamnus cathartica Lin.

Sprengel, 1767
Roll II, 126

Europa

In dumetis hinc inde Fr.
1826

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Cor. 2d & Walnut, under Barnum's Hotel,

ST. LOUIS, MO.

Mem'd it monitions
& - Calendar -
200 other allusions
& was known to
the notes in
Aug. 1868

794

Aug. I. 67

Vitis riparia

1, Leaves with long acuminate and teeth also long acuminated.

Seeds obtuse above, very slender filiform suture

Calyx orl-oblong, tuberculate, somewhat convex.

Taylor (berry green, bunch)

Calyx depressed, margin

Flickwerth (berry black)

b. Leaf obcordate, sinus almost none

Calyx excavated

Delaware

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2, Leaves with short teeth.

Calyx crenulate, convex, seed obtuse

Clinton

Hildenberg (at Sanlands)

0 1 2 3 4 5 6 7 8 9 10
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Hegelmaier 1867 * addition ÷ App. II 1869

I Cavallitrichae

a Cells of the keel or wing of the fruit with indented and often netted ridges. Crystals, often present. Filaments not elongated. Bracts mostly wanting. Mostly Landplants.

α. base of fruit not staminous

* Keels convergent

1. C. Mullerii Sonder (C. macroptera Hegel) New Holland

** Keels straight

* 2. C. marginata Tom. Torreyana β. Bertevana γ. Lechleri * stenocarpa Hg Calif.

3. C. turfosa Bertero

4 C. occidentalis Hegelm. Cuba

5 C. deflexa Brid. α. Brunniana β. Austini. * Japonica Engl. * Cruciocarpa Hg Austral.

***. Keels eversed

* 6. C. Nuttallii Torr

β. base of fruit staminous

7. C. peploides Nutt (C. Drummondii Hegelm.) * microcarpa Eng. Cuba

* 8 C. Sonderi Hegelm. n. sp. New Holland

* 9. C. umbonata Hegelm. n. sp. New Holl. / Tasman.

b Cells of the keel without indented ridges, never crystals, mostly wanting, α. present; edges of fruit rounded; plants often elongated. Bracts Amphilepis or plenty, stigma erect persistent

* 10. C. antarctica Hegelm.

* 11 C. heteropoda Engelm (= appendix)

12 C. heterophylla Pursh (C. Arizonica Hegelm.) * Blanderi Hg Calif.

13 C. obtusangula Le Gall

β. edges of fruit keeled; stigma erect

14. C. verna L

15 C. stagnalis Scop.

γ. stigma reflexed deciduous

16 C. hamulata Kützing * cyclocarpa Hg N. Holland.

17. C. pedunculata DC.

II Pseudovallitrichae

18 C. autumnalis L

19 C. truncata Guepin

6 species added 1867 No 6 ÷ 1869 t. th 13 ÷ 1864 = 25 sp.

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La Clede Hotel
Sept - 13th

Dear Doctor -

I find that several of my friends are going to Hermann in the morning And they insist upon my going with them - As it will save some time for me I think I had better go and trust to luck for seeing Shaws Garden - I therefore hope you will excuse me from my engagement with you in the morning & also. Excuse pencil -

Very Truly
Geo Engelmann

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several of whom died, and ... would have been greater but for the kind attention of Dr. Evans, who, though himself laboring under an exhausting diarrhœa, allowed himself no rest, but in the triple capacity of physician, nurse and companion, was ever at the bed-side of the sick, administering to their wants, and encouraging them by his cheering words.

From Fort Pierre, Dr. Evans again visited the Mauvaises Terres, where in a short time he succeeded in obtaining a large collection of the fossil fauna of that region, even more extensive than his former one, and embracing a considerable number of new and interesting species. On his return to the Fort he set about preparing for his long journey, which from the hostility of the Blackfeet and other Indian tribes, together with the difficulties incident to the route, was regarded by the Indian traders as extremely hazardous; hence it was exceedingly difficult to find either guides or hunters willing to accompany him. After much persuasion, however, he succeeded in procuring the services of two hunters and a half-breed guide, they agreeing to go with him as far as the Flathead Village. With this meagre escort he started from Fort Pierre, but scarcely had he reached the borders of the Blackfeet country ere his hunters became alarmed, and unceremoniously left his camp during the night and returned to the Fort. Under these discouraging circumstances a person less courageous than Dr. Evans would have turned back; but difficulties served only to develope the indomitable

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* To Dr. Hiram A. Prout is justly due the credit of having first called attention to the existence of such remains in that region by his excellent memoirs of Palæotheroid and other bones, published in Silliman's Journal.

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...e of the highest value ...
...ey was ordered.

September 2, 1861.

The President, Dr. ENGELMANN, in the chair.

Seven members present.

The following donation to the library was received: Bull. de la Soc. Imper. zool. d'Acclimatation, Paris, No. 7, Juillet, 1861, *from the Society.*

Mr. Holmes presented from Dr. B. F. Shumard the following skulls from Texas: *Felis pardalis*, Linn. (Tiger-cat), from Travis Co.; *Felis onza*, Linn. (Jaguar), from Hays Co., and *Dicotyles torquatus* (Peccary), from Travis Co.

Dr. Engelmann made some remarks on the temperature and humidity of the past three summer months. June and August were by more than two degrees warmer than the averages for these months, while July was cooler. The quantity of rain for each of these months was below the average

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796

Call. heterophylla

Jun. 14 1865

subsessa

×150

no papillae seen

stands stigma

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ALEX. LEITCH,

APOTHECARY & PHARMACEUTIST,

Marble Building Cor. Fourth & Olive Sts. St. Louis. Mo.

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Pollen

797

Geyer Herb.	oblipt	0.024 – 0.027	×	0.020 – 0.024
	globos.	0.025 – 0.026		
Hall Athens	globos	0.022 – 0.024		
Austin Pollard	"	0.020 – 0.022		
Bigelow Calif.	"	0.023		

Engelmann & Curtis Herbarium

antheræ, Stamen

Geyer Herb.	0.7 mm
Hall Athens	0.7 – 0.8
Austin Pollard	0.7 – 0.8
Short Kentucky	1.0
Bigelow Calif.	0.6 – 0.7

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George Engelmann Papers

Smith & Orlis
DRUGGISTS
Southwest Fifth and Market Streets

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